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(54)[TITLE OF THE INVENTION]

MANAGEMENT METHOD OF WAREHOUSING/DELIVERY OF COMMERCIAL PRODUCTS [Shoohin no nyuuko/shukko Kanri hoho]

(57) [ABSTRACT]

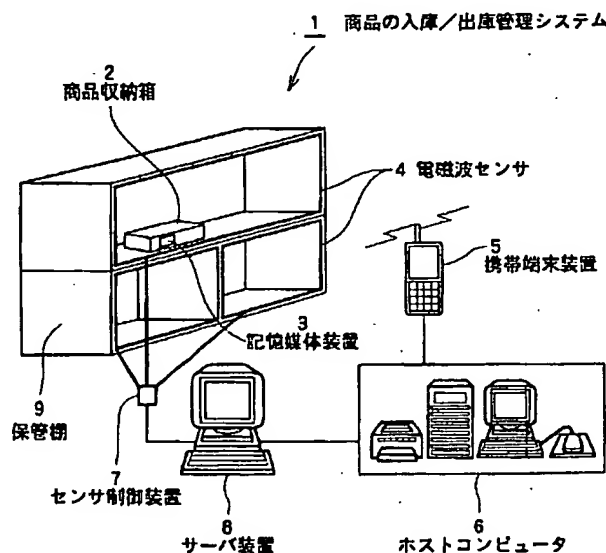
[PURPOSE]

To offer a management method of warehousing/delivery of commercial products with good efficiency and high reliability.

[CONSTITUTION]

It applies to the management system of warehousing/delivery of commercial products 1 that is equipped with a commercial products container box 2, a memory medium device 3 that is attached to the commercial products container box 2, electromagnetic wave sensor[s] 4 that is arranged on a storage shelf 9, a portable terminal device 5 that reads and wireless transmits management data (commercial products data, information on storage shelf location) , a host computer 6 that stores management data of inventory commercial products, a sensor control device 7, and a server device 8; and it refers to the management method of warehousing/delivery of commercial products that displays storage location of the commercial products container box 2 with lights and sound during the time of delivery.

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf



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[Amendments: There are no amendments to this patent.]

[Note: All names, addresses, company names, and brand names are translated in the most common manner. Japanese language does not have singular or plural words unless otherwise specified with numeral prefix or general form of plurality suffix.

Translator's note]

[CLAIMS]

[CLAIM ITEM 1]

According to a warehousing/delivery management method of commercial products that is equipped with a host computer that stores and manages data on commercial products relating to all commercial products which are subjected for inventory, a memory medium device that is attached to a commercial products container box, and memorizes commercial products data corresponding to the contained commercial products, electromagnetic wave sensor[s] which are arranged in plural numbers at storage location of the commercial products container boxes to not only detect warehousing and delivery of commercial products container boxes but also, generate storage position information where sensors are arranged, a portable terminal device that is portable and reads commercial products data of the commercial products subjected for warehousing and delivery among commercial products data stored in said host computer and transfers to the memory medium device; and when said commercial products container box passes through said electromagnetic wave sensors, it manages warehousing based on the commercial products data from said memory medium device, and at the same time, manages delivery based on commercial products data transferred from said portable terminal device, the warehousing/delivery management method of commercial products is characterized by the fact that implements warehousing and delivery management of the commercial products in accordance with steps described below.

FIRST STEP: To register commercial products data of commercial products subjected for warehousing on the host computer.

SECOND STEP: To transfer and memorize commercial products data of the first step on the memory medium device that is attached to the commercial products container box.

THIRD STEP: When memory medium device of the second step passes through electromagnetic wave sensors during warehousing, to send storage location information to the memory medium device to be memorized from the electromagnetic wave sensors, and at the same time, to allow electromagnetic wave sensors to detect commercial products data of memory medium device, and to add storage location information to the commercial products data to send to the host computer to be stored.

FOURTH STEP: When delivery is instructed , the portable terminal device reads commercial product data and storage location information subjected for said delivery and is stored in the host computer.

FIFTH STEP: Portable terminal device of the fourth step is brought to the commercial products storage location to wireless transmit commercial product data of the commercial product subjected for delivery and storage location information; and memory medium device compares thus commercial products data and storage location information it received against commercial product data and storage location information which were memorized at the time of warehousing to generate lights and sound based on results of said comparison to display storage location.

SIXTH STEP: When memory medium device of the fifth step passes through electromagnetic wave sensors (delivery), it updates commercial product data on the memory medium device and erases storage location information, and at the same time, sends updated commercial products data of memory medium device and storage location erasure information detected by the electromagnetic wave sensors to the host computer to be stored.

#### [DETAILED EXPLANATION OF THE INVENTION]

[0001]

#### [FIELDS OF INDUSTRIAL APPLICATION]

This invention relates to warehousing/delivery management method of commercial products, which manages warehousing, and delivery of commercial products.

[0002]

#### [PRIOR ART]

According to conventional management method of warehousing/delivery of commercial products, the one that is designed so the computer to memorize numerous volumes of commercial products data and take out applicable commercial products in accordance with delivery request from the storage location, and re-registers that result on the computer has been known.

[0003]

In addition, a method to manage warehousing/delivery of commercial products by printing bar codes on commercial products, or to paste bar code labels on the commercial products to process warehousing and delivery management of commercial products efficiently has been also known.

[0004]

Furthermore, as in the case of POS system (point of sale management system) that utilizes bar codes. A method to manage status of warehousing and delivery of commercial products, and at the same time carries out assortment of the commercial products in accordance with sales information of the commercial products has been also known.

[0005]

[SUBJECTS SOLVED BY THIS INVENTION]

According to conventional management method of warehousing/delivery of commercial products, although as in the case of POS system, it makes it possible to conduct an efficient management of the commercial products through classification of commercial products which are selling well and not well, assortment of good selling commercial products or forecast of sales volume and the like, the situation is that it must rely on the experienced people with thorough knowledge when it comes to warehousing and delivery work of the commercial products to store commercial products in a large facility such as warehouse and to take out commercial products in accordance with delivery request .

[0006]

As explained above, warehousing and delivery of the commercial products present subjects of requiring much time for search and retrieval of commercial products because storage location of warehoused commercial products is memorized in connection with the subjected commercial products, and delivery of the commercial products is made by simply relying on that memory at the time of delivery.

[0007]

In addition, although a method to pre-establish commercial products and storage locations beforehand can be also mentioned, it leaves a subject that volume of to-be warehoused commercial products may sometime happens to be greater than forecast, and cannot be contained at designated storage location, or on a contrary, volume may sometime happens to be too few from the forecast causing waste of space for such storage.

[0008]

Furthermore, a subject remains on not possible accommodation toward flexibilities against storage of seasonal types of commercial products, or sudden changes including changes in volume or returned goods.

[0009]

This invention was completed to solve such subjects; and its first purpose is to offer a management method of warehousing/delivery of commercial products that allows efficient warehousing and delivery of the commercial products even by persons who are responsible for warehousing and delivery may vary, or persons with insufficient knowledge of storage location of commercial products.

[0010]

In addition, the second purpose is to offer a management method of warehousing/delivery of the commercial products that allows warehousing management of commercial products that does not designate storage location of the commercial products and utilizes limited space with good efficiency and degree of freedom.

[0011]

[MEASURES USED TO SOLVE THE SUBJECTS]

The management method of warehousing/delivery of commercial products that relates to this invention solves above-explained subjects through warehousing and delivery management of the commercial products characterized to include following steps: the FIRST STEP that registers commercial products data of commercial products subjected for warehousing on a host computer; and the SECOND STEP that transfers and memorizes commercial products data of the first step on a memory medium device that is attached to a commercial product container box; and the THIRD STEP that when memory medium device of the second step passes through electromagnetic wave sensors during warehousing, storage location information is sent from the electromagnetic wave sensors to the memory medium device to be memorized, and at the same time, commercial products data on the memory medium device is detected by the electromagnetic wave sensors and adds storage location information to said commercial products data and send this to the host computer to be stored; and the FOURTH STEP that allows portable terminal device to read commercial product data subjected to delivery and storage location information which are stored in the host computer in the case of delivery instruction ; and the FIFTH STEP that brings in portable terminal device of the fourth step to the commercial products storage location, and wireless transmits commercial product data and storage location information subjected to delivery, and allows memory medium device to compare thus received commercial products data and storage location information against commercial products data and storage location information which were memorized at the time of warehousing to generate lights and sound based on the results of such comparison to display the storage location; and the SIXTH STEP that when memory medium device of the fifth step passes through electromagnetic wave sensors (delivery), it updates commercial products data of the memory medium device, and erases storage location information, and at the same time, sends thus updated commercial products data of memory medium device detected by the electromagnetic wave sensors and erased storage location information to the host computer to be stored.

[0012]

[ACTIONS]

According to the management of warehousing/delivery of commercial products of this invention, when memory medium device passes through electromagnetic wave sensors during the time of warehousing, storage position information is sent to the memory medium device to be memorized from the electromagnetic wave sensors, and at the same time, electromagnetic wave sensors are made to detect commercial products data of the memory medium device to add storage location information to the commercial products data to send to the host computer to be stored; and therefore, even when applicable commercial products are stored at any optional locations, it is possible to know the warehoused commercial products and their storage location through commercial products data and storage location information.

[0013]

In addition, according to this invention's management method of warehousing/delivery of commercial products, because portable terminal device is brought into the commercial products storage location to wireless transmit commercial products data and storage location information of the commercial products subjected to delivery, and memory medium device compares thus received commercial products data and storage location information against commercial products data and storage location information memorized at the time of warehousing to generate lights and sound based on the results of comparison to display storage location; and therefore, it is possible to know the location of applicable commercial products.

[0014]

Furthermore, when memory medium device passes through electromagnetic wave sensors (delivery), commercial products data in the memory medium device is updated, and storage location information is erased, and at the same time, electromagnetic wave sensors send updated commercial products data and storage position erasure information of the memory medium device to the host computer to be stored; and therefore, it is possible to conduct inventory management of the commercial products after delivery.

[0015]

#### [EXAMPLES]

Examples of this invention are explained in reference with attached Figures. Figure 1 illustrates a system constitution of management of warehousing/delivery of commercial products to which this invention's management method of warehousing/delivery of commercial products is applied. According to the Figure 1, the warehousing/delivery management system of commercial products 1 is equipped with commercial products container box 2 that contains commercial products subjected to warehousing/delivery, memory medium device 3 of, for instance, either label form or card form that is attached to the commercial products container box 2, plural numbers of electromagnetic wave sensors 4 which are arranged on the storage shelf 9 that stored commercial products, portable terminal device 5 that reads management data (commercial products data, storage location information) which are stored in the host computer 6 and wireless transmit these, host computer 6 that stores management data of inventory commercial products, sensor control device 7 that collects commercial products data detected by the electromagnetic wave sensors 4 and storage location information detected by the electromagnetic wave sensors 4 to the server device 8, and server device 8 that issues various commands such as collection of management data (commercial products data, storage location information) from the sensor control device 7, setting of delivery data and the like and offers various information to the host computer 6.

[0016]

Figure 2 illustrates constitution of one example of memory medium device. The memory medium device 3 is constituted of either small card or label shape, and it encloses battery 11, lamp 12, speaker 13, transmitter and receiver 14, memory medium 15, antenna 16 which are constructed of micro-size parts, and it receives commercial product data that is transmitted from the portable terminal device 5, or storage location information transmitted from the electromagnetic wave sensors 4 at the transmitter and receiver 14 via antenna 16, and memorizes on the memory medium 15 as warehousing information.

[0017]

In addition, the memory medium device 3 should be constructed in such manner that it receives management data (commercial products data, storage location information) of delivery information sent wireless from the portable terminal device 5 at the transmitter and receiver 14 through antenna 16, and compared with warehousing information (commercial products data, storage location information) memorized in the memory medium 15; and when delivery information happens to match with those of warehousing information, or meet prescribed conditions (storage location or types, color, volume of commercial products, and the like), it drives lamp 12 or speaker 13 to generate lights and sound to display storage location.

[0018]

Furthermore, the memory medium device 3 should be constructed in such manner that when it passes through the location where electromagnetic wave sensors 4 are arranged, part of commercial data memorized in the memory medium device 15, for instance, commercial product code, data of warehousing and the like, is transmitted from antenna 16 through transmitter and receiver 14.

[0019]

Regarding electromagnetic wave sensors 4, they may be arranged on the storage shelf 9 in optional manner, and during warehousing or delivery, they are to generate electromagnetic wave bearing storage location information, and when memory medium device 3 that is attached to the commercial products container box 2 passes through electromagnetic wave, they are to send storage location information to the memory medium device 3, and at the same time, they detect part of commercial products data (commercial product code, data on warehousing date and the like) from the memory medium device 3 to send part of commercial products data and storage location information to the host computer 6 through sensor control device 7 and server device 8. Furthermore, although Figure 1 illustrates storage shelf 9 that limits storage location, it is possible to arrange electromagnetic wave sensors 4 at storage location as well as plural numbers of electromagnetic wave amplifiers on the ceiling and the like to accommodate toward wide area such as warehouse and the like.



[0020]

The sensor control device 7 controls timing of receiving part of commercial products data or storage location information send from the electromagnetic wave sensor 4, or provides distinction of warehousing and delivery and offers information to the server device 8. The server device 8 controls drive of sensor control device 7 to either send part of commercial products data and storage location information to the host computer 6 or provides various settings and commands relating to the warehousing and delivery.

[0021]

The host computer 6 works to store commercial products data and storage location information, and sets or manages inventory period based on this information, manages history of warehousing and delivery as well as forecast out of stock of the commercial products and replenishment.

[0022]

The portable terminal device 5 comprises data input/output device equipped with a wireless transmitter; and it reads commercial products data from the host computer 6, or sends this as warehousing information to the memory medium device 3, or after reading commercial products data and storage location information subjected to delivery from the host computer 6, it is carried into commercial products storage location to wireless transmit commercial products data of the to-be delivered commercial products and storage location information.

[0023]

Then, operation of management system of warehousing/delivery of commercial products that applies this invention is explained below. Figure 3 illustrates an operation flow diagram of management system of warehousing/deliver of commercial products that uses this invention's management method of warehousing/delivery of the commercial products. At status S1, commercial products data of the commercial products subjected to warehousing is registered on the host computer 6 by operating server device 8 as the first step, and then, as second step, to-be warehoused commercial products data is transmitted from the portable terminal device 5 to transmit commercial products data to the memory medium device 3 that is attached to the commercial products container box to be memorized.

[0024]

Status S2 through status S4 equate to the third step of the management method, and when commercial products container box 2 passes through electromagnetic wave sensors 4 in order to store the commercial products on the storage shelf 9 at the status S2, the memory medium device 3 that is attached to the commercial products container box 2 receives and memorizes storage location information transmitted from the electromagnetic wave sensors 4, and commercial products container box 2 is stored (warehousing at the status S3) on the storage shelf 9. On the one hand, at the status S4, electromagnetic wave sensors 4 detect commercial products data memorized by the memory medium device, and adds storage position information of electromagnetic wave sensors 4 to said commercial products data to send to the host computer 6; and the host computer 6 memorizes storage location information of the warehoused commercial products container box 2 along with corresponding commercial products data. (Warehousing is completed)

[0025]

When delivery is designated in this status, portable terminal device 5 reads and memorizes commercial products data and storage location information of delivery designation from the host computer 6 at the status S5 (corresponds to the fourth step of the management method).

[0026]

Status S6 to status S7 corresponds with the fifth step of the management method; and at status S6, portable terminal device 5 with memory of commercial products data designated for delivery and storage location information are brought into the commercial product storage location to wireless transmit commercial products data and storage location information. Then, after moving onto the status S7, the memory medium device 3 receives commercial products data and storage location information, and then, it compares with the commercial data and storage location memorized at the time of warehousing on the memory medium device 3; and when delivery information happens to corresponds with that of warehousing information, or when delivery information satisfies prescribed conditions of warehousing information, lamp 12 and speaker 14 of the memory medium device 3 illustrated in the Figure 2 are driven to display storage location of the commercial products container box 2.

[0027]

When commercial products container box 2 that was designated for delivery at the status S8 is taken out of the storage shelf 9 (delivery), it moves onto the status S9 (corresponds to the sixth step of the management method), and when memory medium device 3 passes through electromagnetic wave sensors 4, the memory medium device 3 updates commercial products data at the time of warehousing and commercial products data based on the commercial products data (for instance, deviation of quantity is computed) of delivery designation to erase the storage location information. In addition, updated commercial products data from the memory medium device 3 detected by the electromagnetic wave sensors 4 and storage location erasure information generated by the electromagnetic wave sensors 4 are sent to the host computer 6 to be stored. Warehousing and delivery hereafter moves from the operation status S9 to status S2 to repeat series of flow.

[0028]

#### [EFFECTS OF THIS INVENTION]

As explained above, because management method of warehousing/delivery of commercial products that relates to this invention sends storage location information from the electromagnetic wave sensors to memory medium device to be memorized when memory medium device passes through electromagnetic wave sensors, and at the same time, commercial products data of the memory medium device is detected by the electromagnetic wave sensors to add storage location information to the commercial products data to send to the host computer to be stored, and even when applicable commercial products are stored at optional storage location, it is possible to know warehoused commercial products and their storage location from the commercial products data and storage location information, it is possible to select the storage location freely even when storage location is limited.

[0029]

In addition, according to the management method of warehousing/delivery of commercial products that relates to this invention, portable terminal device is brought into to where commercial products are stored to wireless transmit commercial products data subjected to the delivery and storage location information, and memory medium device compares thus received commercial products data and storage location information against commercial products data and storage location information memorized at the time of warehousing, and generates lights and sound based on the results of said comparison to display the storage location ; and as it is possible to find out the location of applicable commercial products, anybody can implement delivery processing easily.

[0030]

Furthermore, according to the management method of warehousing/delivery of commercial products that relates to this invention, memory medium device updates commercial products data and erases storage location information when said memory medium device passes through electromagnetic wave sensors, and at the same time, electromagnetic wave sensors detects updated commercial products data of memory medium device and storage location erasure information and sends them to the host computer; and therefore, there is not need for cumbersome works to enable inventory management of commercial products after delivery.

[0031]

And therefore, it is possible to offer the management method of warehousing/delivery of commercial products that shows good efficiency and high reliability.

#### [BRIEF DESCRIPTION OF THE FIGURES]

[FIGURE 1]

It illustrates a system diagram of warehousing/delivery management system of commercial products that uses this invention's management method of warehousing/delivery of commercial products.

[FIGURE 2]

It illustrates a constitution of one example of memory medium device.

[FIGURE 3]

It illustrates an operation flow diagram of warehousing/delivery management system of commercial products that uses this invention's management method of warehousing/delivery of commercial products.

#### [DESDSCRIPTION OF CODES]

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf, 11: battery, 12: lamp, 13: speaker, 14: transmitter/receiver, 15: memory medium, 16: antenna

Figures 1 and 2

1: warehousing/delivery management system of commercial products, 2: commercial products container box, 3: memory medium device, 4: electromagnetic wave sensor, 5: portable terminal device, 6: host computer, 7: sensor control device, 8: server device, 9: storage shelf, 11: battery, 12: lamp, 13: speaker, 14: transmitter/receiver, 15: memory medium, 16: antenna

図1 【図1】

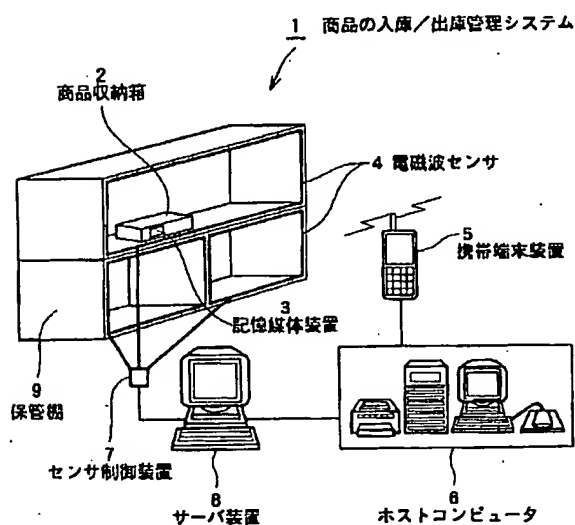
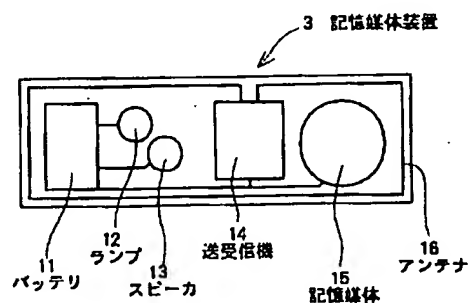


図2 【図2】



【図3】 F-8.3

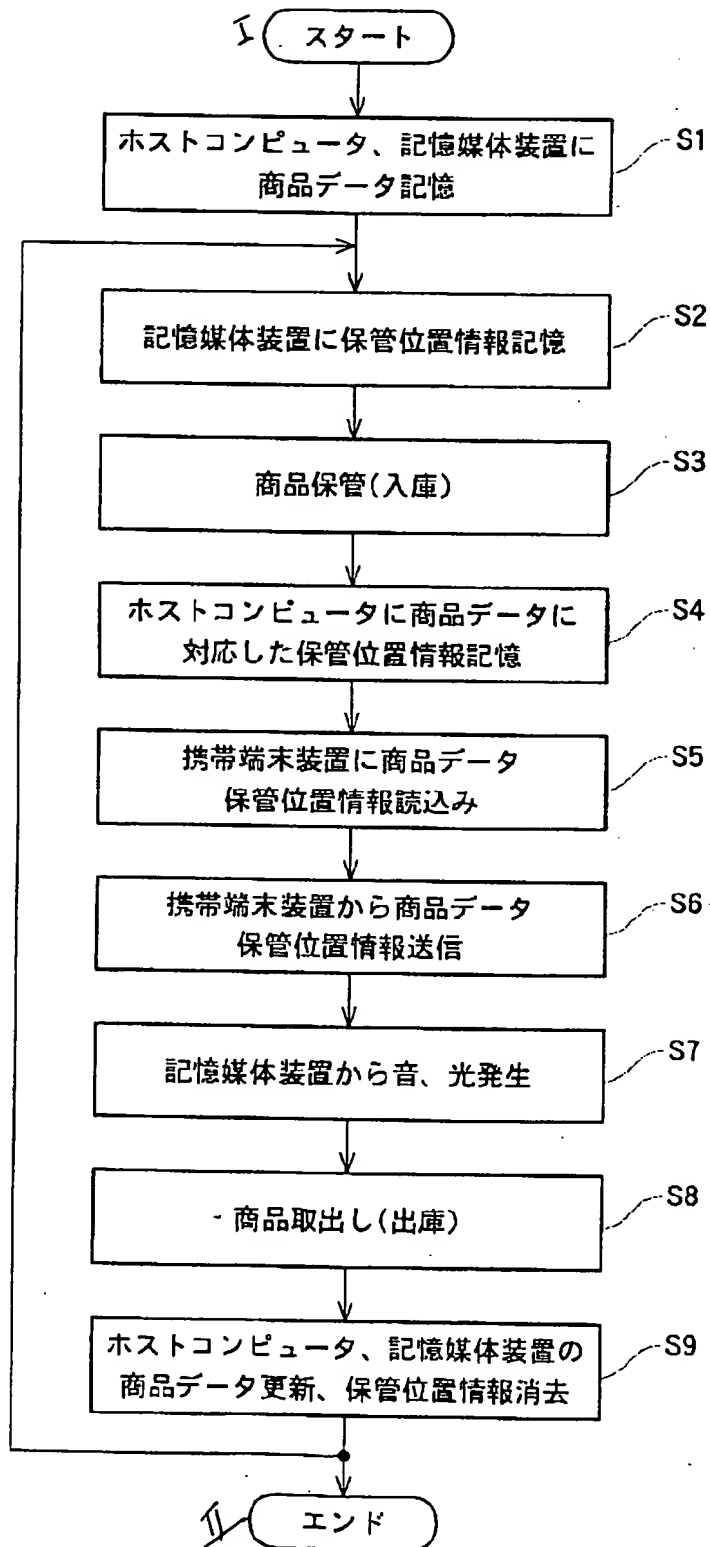


Figure 3

I: start, II: end

S1: memorize commercial products data on host computer and memory medium device

S2: Memorize storage location information on the memory medium device

S3: commercial products storage (warehousing)

S4: memorize storage location information corresponding with commercial products data on the host computer,

S5: Read commercial products data and storage location information on the portable terminal device

S6: transmit commercial products data and storage location information from the portable terminal device

S7: generate sound and lights from the memory medium device

S8: take out commercial products (delivery)

S9: update commercial products data and erasure of storage location information on the host computer and memory medium device